IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

Ex Parte:	COLLINS, TIMOTHY
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Title:	Method and Device for Enabling and Disabling Group Transmissions
Group:	2615
Examiner:	DANIEL SWERDLOW

BRIEF ON BEHALF OF APPELLANTS UNDER 37 CFR 41.37

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I. REAL PARTY IN INTEREST

The name of the real party in interest for purposes of this appeal is Motorola, Inc., a Delaware corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the Applicant, the Applicant's legal representative, or assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

III. STATUS OF CLAIMS

Claims 1 and 3-14 remain in the application. Claims 1 and 3-14 are being appealed. Claims 1 and 3-14 stand or fall together.

In a final Office Action dated June 6, 2006, the Examiner rejected Claims 1, 3 and 5-14 under 35 U.S.C. 103(a) as being unpatentable over Steeves (USPN 6,570,487) in view of Turner (USPN 6,549,119) and further in view of Meier (USPN 5,294,931) and Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Steeves in view of Turner and further in view of Meier and Carrender, et al. (USPN 5,850,187).

IV. STATUS OF AMENDMENTS

No amendments to the claims have been made subsequent to the Final Office Action mailed June 6, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Although specification citations are inserted below in accordance with 37 C.F.R. § 41.37, these reference numerals and citations are merely examples of where support may be found in the specification for the terms used in this section of the brief. There is no intention to in any way suggest that the terms of the claims are limited to the examples in the specification. Although, as demonstrated by the reference numerals and citations below, the claims are fully supported by the specification as required by law, it is improper under the law to read limitations from the specification into the claims. Pointing out specification support for the claim terminology, as is done here to comply with rule 41.37, does not in any way limit the scope of the claims to those examples from which they find support. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, the reference numerals and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

The invention, as defined in Claim 1 and with reference to the Specification, pages 13-15, is a method comprising the steps of: receiving a carrier signal; continuously monitoring the carrier signal for a first predetermined condition; selecting a channel and continuously transmitting data on the selected channel if the first predetermined condition is satisfied and while transmitting the data continuously monitoring the carrier signal for a second predetermined condition; and ceasing the transmitting of the data on the selected channel if the second predetermined condition is satisfied during the transmitting of the data on the selected channel, wherein the first predetermined condition is satisfied based on one of, when a received power level exceeds a first threshold and a synchronization signal, and the second predetermined

condition is satisfied based on the received power level. (See also FIGs. 8 and 9 as an example embodiment of the invention as recited in Claim 1).

The invention, as defined in Claim 6 and with reference to the Specification, pages 13-15, is at lease one device comprising: a receiver (703) for receiving a carrier signal; a monitor (704), coupled to the receiver, for continually monitoring the carrier signal for a first and second condition; a storage medium (230) having data stored therein; and a transmitter (702), coupled to the receiver, the monitor, and the storage medium, that is configured to select a channel and to continuously transmit at least a portion of the data on the selected channel when the first condition is satisfied and is further configured to cease the transmitting of the data on the selected channel when the second condition is satisfied during the transmitting of the data on the selected channel, wherein the first condition is satisfied when a received power level exceeds a first threshold and the second condition is satisfied based on the received power level. (See also FIGs. 7 and 9 as an example embodiment of the invention).

Accordingly, the invention as defined by Claim 1 and 6 includes the features of a tag device that has the capability of continuously monitoring a carrier signal while it is transmitting data and that further has the capability of ceasing its transmission of data if it detects (during the transmitting of its data) a second condition based on received power level. These claimed features are not disclosed in the references cited by the Examiner.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether Claims 1, 3 and 5-14 are patentable under 35 U.S.C. 103(a) over Steeves in view of Turner and further in view of Meier?

B. Whether Claim 4 is patentable under 35 U.S.C. 103(a) over Steeves in view of Turner and in further view of Meier and Carrender, et al.?

VII. ARGUMENT

A. Claims 1, 3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steeves (USPN 6,570,487) in view of Turner (USPN 6,549,119) and further in view of Meier (USPN 5,294,931).

To establish a *prima facie* case of obviousness, and hence to find Claims 1, 3 and 5-14 unpatentable under 35 U.S.C. § 103(a) over the combination of Steeves and Turner, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not be based upon applicant's disclosure. MPEP at § 2142.

In the present case, all three criteria for establishing a *prima facie* case of obviousness are not met because the combined teachings of the Steeves, Turner and Meier references do not teach or suggest all of the claim limitations recited in Claim 1 and 6 and included by dependency in Claims 3, 5 and 7-14. More particularly, the recitations of Claims 1 and 6 are directed

respectively to a method and a device supporting a tag that while continuously transmitting data on a selected channel, the tag also continuously monitors a carrier signal for a second condition based on received power level, and if that second condition is satisfied while the tag is transmitting its data on the selected channel, the tag then ceases transmitting the data on that selected channel. As explained in more detail below, neither Steeves, Turner nor Meier discloses such a tag device that has the capability of continuously monitoring a carrier signal while it is continuously transmitting data or that further has the capability of ceasing its transmission of data if it detects (during the transmitting of its data) a second condition based on received power level.

By reference to figure 3 and the accompanying language in the specification, Steeves discloses a tag 151 that "is normally in a low-power quiescent stand-by state in which tag 151 monitors the RF environment for an activation signal from a reader" (col. 7, lines 40-42). "The activation signal . . . causes each such tag to change from quiescent stand-by state to an active state. Once in active state, the tags evaluate 303 the request sent by the reader" (col. 7, lines 44-49). "If the request is relevant, the tag assemble 305 a packet of data . . . [and] if the requested data are voluminous . . . the data are formed into several packets for individual transmission" (col. 7, lines 61-62 and 67 to col. 8, lines 1-2). "Once the tag has assembled one or more packets of data, the tag receiver . . . monitors 307 the RF traffic on the transmission channel . . . [and] calculates 308 time slot availability for transmission of its data" (col. 8, lines 5-7 and 9-10). "Once a sufficiently quiet RF environment is detected, the tag wishing to transmit begins transmission of its message. . . " (col. 9, lines 14-15) in a time slotted transmission process.

More specifically, Steeves states "based on the observed passive/active RF environment, the tag randomly selects 309 timeslots for transmission and waits 310 for that selected time slot.

At the allocated time, the tag transmits 311 a packet of data (using the two active cycles described above) and checks 312 for an acknowledgement signal from the reader indicating that the data packet was received. If so, a check 312 is made to see whether there are additional packets to transmit, in which case processing returns to 307 to enable transmission as described above. If the acknowledgement signal is not received, processing returns to 310 so that the current packet may be transmitted at the next available time slot. After all of the packets have been successfully transmitted, processing returns to 306 and the tag is put back in the quiescent low-power stand-by state" (col. 9, lines 23-37). Note that Steeves (Turner and Meier) do not *continuously* monitor the received carrier signal for transmission conditions during data transmission. Steeves disclosed device only monitors transmission conditions before and after data packet transmission, not during data packet transmission. Turner's disclosed device monitors the received carrier signal before and after data transmissions (see below) but not during data transmission. Meier's disclosed device only monitors the received carrier signal before data packet transmission (see below), not during data transmission. *Neither Steeves, Turner nor Meier's device possess any means for ceasing data transmission at any (e.g., intra-data symbol or bit) point during the transmission of a data packet, as advantageously incorporated in the claimed embodiments of the present invention.*

Thus, based on the above reading of Steeves, the tag disclosed therein monitors the reader signal for a first condition (i.e., if a received request is relevant) but the tag does not subsequently (while it is transmitting its data on the selected channel) continuously monitor a carrier signal for a second condition based on received power level and then cease its transmission of the data on the selected channel if the second condition is satisfied during the transmitting of the data on the selected channel, as is recited in Claims 1 and 6 and included by

dependency in Claim 3-5 and 7-14. *Instead, the tag disclosed in Steeves does not monitor the reader signal at all during the transmission of its data packet*, and continues to transmit its data until all of the packets have been successfully transmitted upon which time the tag returns to its quiescent low-power stand-by state where it resumes its monitoring of the RF environment for an activation signal from the reader. The reader device in Steeves cannot cause the halting of tag data transmission at any point in time, as opposed to claimed embodiments of the present invention.

The tag taught by Steeves also does not continuously transmit data: upon receiving a request, and deeming the request relevant, the tag monitors RF activity and waits for a time slot to transmit its data packet in (see flowchart in FIG. 3; col. 8 lines 5-16). Thus, Steeves' tag does not continuously transmit data if the first predetermined condition is satisfied as in Claim 1; it instead evaluates the RF environment for inactivity and then waits (delays transmission) until the selected time slot. In the Final Office Action dated June 15, 2006 on page 3, the Examiner conceded that "Steeves does not clearly teach a specific method of transmitting data which includes continuously transmitting data on the selected channel and while transmitting data, continuously monitoring the carrier signal for a second predetermined condition; and ceasing the transmitting of data if the second predetermined condition is satisfied". The Examiner, however, suggests that the Turner reference discloses these limitations. Applicants disagree. As argued above, Neither Steeves, Meier, nor Turner teach any methods that monitor predetermined conditions *during* packet or code transmission, as the present Application teaches. All of the cited prior art including Turner teaches transmitting a full packet (or code) before evaluating any other conditions (such as receipt of acknowledgement (ACK) signals). Applicants' method allows tag data transmissions to (immediately) *cease at any point during packet transmission*

(even after partial data transmission), and involves *continuous data transmission* as long as the predetermined (power) conditions are met. There are no gaps in data transmission to wait for start delays, clear channels, or acknowledgement signals, as taught in both Steeves and Turner (see both Steeves FIG. 3 and Turner FIG. 5). It should be noted that the Applicants describe other methods for dealing with transmission collisions, and that multiple tags are typically expected to transmit simultaneously in the described system.

The Turner reference discloses a tag (transponder) and reader (interrogator) system that provides for an electronic identification for items such as various goods in a retail store (Abstract). In accordance with the flow diagram of FIG. 5, upon receiving an interrogation signal from the interrogator, the tag device powers up and waits a delay period that was chosen for the tag and then sends its entire "stored code sequence" in response to the interrogation signal. The code sequence "represents the information stored in the transponder, such as an identity code" (col. 3, lines 25-30 and 48-58). After transmitting the coded signal, the tag device then "waits for a predetermined number of clock periods and than checks whether an ACK has been detected" (col. 3, lines 59-61). If no ACK is detected during the appropriate time, the tag restarts the delay period and retransmits the coded signal response at the expiration of the delay period (col. 3, lines 61-66). Once the device does receive the ACK, it waits for a SWITCH signal, which switches the tag into a reduced power mode (col. 4, lines 3-6 and 23-27).

Accordingly, the Turner device does not continuously transmit data once the first condition is satisfied as claimed in Claims 1 and 6; this device instead delays its data transmission, then transmits it entire identity code, then stops its data transmission and checks for receipt of an ACK signal (as does Steeves). The device will further repeat its data transmission after another delay period, if it doesn't receive an ACK signal (see FIG. 5).

The Turner device also does not continuously monitor the carrier signal for a second predetermined condition while it is in the process of transmitting its data as is required in Claims 1 and 6. Instead the device stops its transmission only after sending a complete code sequence, and then checks for a predetermined condition, which is the ACK signal. Thus, the Turner device cannot cease transmitting data (during code data transmissions) if the second predetermined condition is satisfied as is required in Claims 1 and 6. Instead this device ceases data transmissions only upon completing its entire code sequence transmission and receiving an acknowledgement (ACK) signal. Once this predetermined (ACK) condition is met, the device simply moves into a state of waiting for a SWITCH signal.

Turning now to the Meier reference, it discloses a system having an interrogation device and a transponder system with multiple transponders (see FIG. 5 and FIG. 6). During discrete time periods, the interrogation device transmits an "RF interrogation pulse" to the transponders. By way of illustration with respect to FIG. 5 for instance, an interrogation device 10 transmits to two transponders 30 and 32 "commencing at the point in time t_0 and having the duration of Δt . . . a first RF interrogation pulse" (col. 4, lines 56-60). "After the end of the time period Δt the first RF interrogation pulse ends and after a pause of a predetermined duration. . . [the interrogation device] will start transmitting a further interrogation pulse" beginning at a time t_1 and having a duration of Δt (FIG. 2; col. 5, lines 26-30). "The transponders 30 and 32 are not provided with a power supply in the form of a battery: they derive their driving power form [*sic*] the respectively received RF interrogation pulse. This involves the rectification of this pulse and charging of a capacitor by means of the voltage produced by rectification. The two transponders 30 and 32 simultaneously receive the RF interrogation pulse . . . so that in both transponders the charging

of the capacitor, functioning as a power source, starts at the point in time t0" and continues until "the expiry of the pulse duration Δt" (FIG. 5; col. 4, line 59 to col. 5, lines 1-3 and 14-15).

In this particular example, "since the transponder 30 is at a shorter distance from the interrogation device 10 than the transponder 32, the transponder 30 receives the RF interrogation pulse with a greater field strength so that accordingly furthermore the voltage produced by rectification has a higher value as well then that in the transponder 32. The consequence is that the capacitor utilized as a power source in the transponder 32 charges up to a higher value than the transponder 32 . . . and it is seen that in the transponder 30, the capacitor voltage will, after the expiry of the pulse duration Δt, have a voltage value which falls within the predetermined voltage range . . . thereby enabling transponder 30 to transmit an answer signal . . . In the transponder 32, the voltage . . . will only reach a value . . . which does not fall within the predetermined voltage range . . . thereby prohibiting the transmission of the answer signal by transponder 32. . . For a description of the present situation it is assumed that the capacitors in the transponder 30 and 32 are discharged so that the charging thereof by the voltage, which is produced by rectification of the RF interrogation pulse, starts at the voltage value 0 again" e.g., at the time t_1 (col. 5, lines 3-25 and 31-35).

Meier states that "After the end of the RF interrogation pulse the oscillation in the said resonant circuit also dies down and the RF threshold detector 48 sends a signal to the control logic system 50 via its output 54, when the RF oscillation has sunk below a predetermined threshold value. Simultaneously, the RF threshold detector 48 sends a signal to the window comparator via its output 56, such signal causing the window comparator 46 to check the charge voltage at the capacitor 44 to see if it has a value between the threshold values S_1 and S_2. If this is the case, the window comparator 46 will feed a signal to the control logic system indicating

the fulfillment of this condition. The control logic then produces an information signal at its output 58 containing a code group representing the identity of the transponder 30, such information signal being transmitted via the antenna 38 so that it may be received by the interrogation device. After the end of the information signal the control logic system 50 will provide a further signal at its output 60, such signal functioning to discharge the capacitor 44." (col. 7, lines 2-23). *Thus, Meier only teaches evaluating the charge voltage before data packet (or "information signal") transmission. Meier's disclosed device will always transmit a fixed duration information signal* (determined solely by the control logic 50 state machine based on the fixed length of the information signal), *and it cannot cease transmitting during data transmission for any reason (or change in conditions), in direct contrast to claimed embodiments of the present invention.*

Based on the above reading of Meier, the tag disclosed therein does not monitor the carrier signal (in this case the interrogation pulse) but instead monitors its own capacitor voltage value for a first condition (i.e., that the voltage value falls within a predetermined voltage range) *before data transmission*, and the tag does not subsequently (while it is transmitting its data on the selected channel) continuously monitor a carrier signal for a second condition based on received power level, and then cease its transmission of the data on the selected channel if the second condition is satisfied during the transmitting of the data on the selected channel, as is recited in Claims 1 and 6 and included by dependency in Claim 3, 5 and 7-14. During the transmission of the tag's answer signal, the transponder disclosed in Meier does not monitor the interrogation pulse because there is no interrogation pulse (or carrier signal) present during the transmitting of this data. During the time a transponder is transmitting an answer signal there is a pause in the (carrier signal) transmission from the interrogation device to allow the transponder

time to transmit its answer signal and then discharge its capacitor so that it is ready to receive the next interrogation pulse. The amount of charge stored on the tag's capacitor during the preceding interrogation pulse is sufficient to power the tag during its data transmission (when the carrier signal is absent). Thus, it is impossible for the tag to monitor a carrier signal for predetermined received power level conditions as described in Claims 1 and 6.

Therefore, since limitations are missing from the Steeves, Turner and Meier references, a rejection of Claims 1, 3 and 5-14 under 35 U.S.C. § 103(a) is improper and should be withdrawn.

B. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steeves (USPN 6,570,487) in view of Turner (USPN 6,549,119), and further in view of Meier (USPN 5,294,931) and Carrender, et al. (USPN 5,850,187).

Applicants have set forth a number of limitations that are recited in Claim 1 and included by dependency in Claim 4, which are not disclosed in the Steeves, Turner and Meier references. More particularly, just as with Steeves, Turner and Meier, Carrender, et al. does not disclose a tag that (while it is transmitting its data on the selected channel) continuously monitors a carrier signal for a second condition based on received power level and then ceases its transmission of the data on the selected channel if the second condition is satisfied during the transmitting of the data on the selected channel, as is recited in Claim 1 and included by dependency in Claim 4. Therefore, since limitations are missing from the Steeves, Turner, Meier and Carrender, et al. references, a rejection of Claim 4 under 35 U.S.C. § 103(a) is improper and should be withdrawn.

For the reason set forth above, Applicants submit that the Examiner has incorrectly rejected Claims 1 and 3-14 under 35 U.S.C. § 103(a) and request that the Board withdraw the rejections.

Respectfully submitted,

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VIII. <u>CLAIMS APPENDIX</u>

1. (Previously Presented) A method comprising the steps of:

receiving a carrier signal;

continuously monitoring the carrier signal for a first predetermined condition;

selecting a channel and continuously transmitting data on the selected channel if the first predetermined condition is satisfied and while transmitting the data continuously monitoring the carrier signal for a second predetermined condition; and

ceasing the transmitting of the data on the selected channel if the second predetermined condition is satisfied during the transmitting of the data on the selected channel, wherein the first predetermined condition is satisfied based on one of, when a received power level exceeds a first threshold and a synchronization signal, and the second predetermined condition is satisfied based on the received power level.

2. (Cancelled)

3. (Previously presented) The method of claim 1 wherein the second predetermined condition is satisfied when the received power level exceeds a second threshold or when the received power level falls below the first threshold.

4. (Previously Presented) The method of claim 1 wherein the first predetermined condition is satisfied when a predetermined synchronization signal is received.

5. (Previously Presented) The method of claim 3 wherein the first and second thresholds are random.

6. (Previously Presented) At least a first device comprising:

a receiver for receiving a carrier signal;

a monitor, coupled to the receiver, for continually monitoring the carrier signal for a first and second condition;

a storage medium having data stored therein; and

a transmitter, coupled to the receiver, the monitor, and the storage medium, that is configured to select a channel and to continuously transmit at least a portion of the data on the selected channel when the first condition is satisfied and is further configured to cease the transmitting of the data on the selected channel when the second condition is satisfied during the transmitting of the data on the selected channel, wherein the first condition is satisfied when a received power level exceeds a first threshold and the second condition is satisfied based on the received power level.

7. (Original) At least the first device of claim 6 wherein the first and second conditions of a first device are the same as the first and second conditions of a second device.

8. (Original) At least the first device of claim 7 wherein the first and second devices transmit simultaneously.

9. (Original) At least the first device of claim 6 wherein the first and second conditions of a first device are different than the first and second conditions of a second device.

10. (Original) At least the first device of claim 9 wherein the first and second devices transmit simultaneously.

11. (Original) At least the first device of claim 6 wherein at least one of the first and second conditions are randomly assigned.

12. (Previously Presented) At least the first device of claim 6 wherein the second condition~~s~~ is uniformly distributed.

13. (Previously Presented) At least the first device of claim 6 wherein the second condition is satisfied when the received power level exceeds a second threshold or when the received power level falls below the first threshold.

14. (Previously Presented) The method of Claim 1, wherein the carrier signal is continuously transmitted.

IX. EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132, entered by the examiner and relied upon by the appellant in the appeal, or relied upon by the examiner as to grounds of rejection to be reviewed on appeal.

X. RELATED PROCEEDINGS APPENDIX

No decisions have been rendered by a court of the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. § 41.37.